Journal of Microbiology, Immunology and Infection (2016) 49, 455—458

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CASE REPORT

Isolated tuberculous liver abscess in an immunocompetent adult patient: A case report and literature review

Tsung-Chia Chen [a,b], Ling-Tai Chou [c], Chen-Cheng Huang [d], An-Bang Lai [e], Jen-Hsien Wang [f,*]

[a] *Division of Infectious Diseases, Taichung Hospital, Ministry of Health and Welfare, Taichung, Taiwan*
[b] *Infection Control Committee, Taichung Hospital, Ministry of Health and Welfare, Taichung, Taiwan*
[c] *Division of Gastroenterology, Taichung Hospital, Ministry of Health and Welfare, Taichung, Taiwan*
[d] *Division of Chest Medicine, Department of Internal Medicine, Taichung Hospital, Ministry of Health and Welfare, Taichung, Taiwan*
[e] *Department of Radiology, Taichung Hospital, Ministry of Health and Welfare, Taichung, Taiwan*
[f] *Division of Infectious Diseases, Department of Internal Medicine, China Medical University Hospital, Taichung, Taiwan*

Received 26 January 2013; received in revised form 20 August 2013; accepted 11 September 2013
Available online 11 November 2013

KEYWORDS
Immunocompetent;
Liver abscess;
Mycobacterium tuberculosis

Tuberculous liver abscess is a rare disease entity even in endemic areas of *Mycobacterium tuberculosis*. It is usually accompanied by pulmonary tuberculosis or enteric tuberculosis. Further, an isolated tuberculous liver abscess is extremely rare. The disease is diagnosed by laparotomy or postmortem autopsy in most cases, and some authors adopted a 9-month antituberculosis regimen. We herein report a case of an isolated tuberculous liver abscess that initially manifested as persistent fever and general malaise, which was diagnosed by liver biopsy and treated successfully with a 6-month antituberculosis regimen and percutaneous abscess drainage.

Introduction

Hepatic tuberculosis (TB) is usually accompanied by pulmonary TB or tuberculous enterocolitis. An isolated tuberculous liver abscess is extremely rare. Less than 25 cases

* Corresponding author. Division of Infectious Diseases, Department of Internal Medicine, China Medical University Hospital, Number 2, Yu-Der Road, Taichung 40447, Taiwan.
E-mail address: wangjenhsien@gmail.com (J.-H. Wang).

http://dx.doi.org/10.1016/j.jmii.2013.09.003

were reported in the literature prior to 2003.[1] Hepatic TB is typically associated with the formation of granulomas that may heal with focal fibrosis and calcification or coalesce to form tuberculomas. If the lesion is large enough, necrosis may occur, forming an abscess. Here, we report a case of an isolated tuberculous liver abscess and review the related literature.

Case report

A 76-year-old man with a history of benign prostate hyperplasia and gout visited our infection outpatient department with the chief complaint of intermittent fever for 2 months. Body weight loss (5 kg/mo), abdominal fullness, poor appetite, and general malaise were also observed. No cough, abdominal pain, or dysuria was complained. Physical examination revealed mild right hypochondrial knocking pain. Laboratory data showed leukocytosis, an elevated C-reactive protein (CRP) level, a mildly elevated erythrocyte sedimentation rate (ESR), and hyponatremia. Blood parameters were as follows: white blood cell (WBC) count, 21,300/μL; segment, 88%; hemoglobin, 12.4 g/dL; platelet count, 459,000/μL; CRP, 11.5 mg/dL; blood urea nitrogen, 10 mg/dL; creatinine, 0.87 mg/dL; Na, 133 mEq/L; K, 4.16 mEq/L; glutamate pyruvate transaminase, 19 IU/L; alkaline phosphatase, 70 IU/L; r-glutamyl transferase, 39 U/L; total bilirubin, 0.7 mg/dL; lactate dehydrogenase (LDH), 73 IU/L; uric acid, 5.1 mg/dL; and ESR, 33. Fever of unknown origin was initially suspected. Although sputum specimens were difficult to obtain, TB cultures and acid-fast staining were performed for three sets. Acid-fast staining was negative; further, serum cortisol levels, thyroid function, tumor markers, and routine stool tests were all within normal limits. No red blood cells or WBCs were detected in the stool. Antinuclear antibody testing and urinalysis were also within normal limits. Chest X-ray examination (Fig. 1A) revealed mild blunting of the right costophrenic angle. Because the fever persisted, the patient was admitted for further evaluation. Abdominal computed tomography (CT) revealed a low-density lesion approximately 4 cm in diameter at the S4 segment, which was suspected to be a liver abscess (Fig. 1B). An empirical antibiotic therapy comprising ceftriaxone and metronidazole was administered. Percutaneous abscess drainage was carried out, and pus cultures were performed to detect the presence of bacteria or fungus. The amebiasis antibody test was negative. Abscess pus and blood cultures yielded no subsequent growth. His fever did not subside after 7 days of treatment, and only a small amount of pus was drained from the tube. The percutaneous drainage was repeated, and the tube was not removed until only a small amount of drainage was observed 2 weeks later. The low-grade fever persisted with right-upper-quadrant abdominal pain. Therefore, we scheduled a liver biopsy for a definitive diagnosis. Triphase CT was performed to exclude hepatocellular carcinoma. A moderate amount of pleural effusion was recorded at this time (1 month after admission), and thoracentesis was performed for pleural effusion analysis. Exudative pleural effusion was noted with a low adenosine deaminase (ADA) level, and cytology and TB polymerase chain reaction (PCR) results were both negative [pleural effusion study: WBC count, 2228/μL; red blood cell count, 1277/μL; neutrophil, 9%; lymphocyte, 84%; ADA, 19 U/L; LDH, 108 IU/L (serum LDH: 90 IU/L); protein, 4.5 g/dL (serum protein: 7 g/dL); and Glu: 128 mg/dL]. Abdominal sonography was performed prior to sonography-guided biopsy. The liver biopsy specimen showed Langerhans giant cells and caseous necrosis (Fig. 2), but exhibited negative acid-fast, Gram, periodic acid-Schiff, and Gomori methenamine silver staining. Anti-TB medications including isoniazid, rifampin, ethambutol, and pyrazinamide were administered accordingly. The fever subsided within 1 week, and his appetite restored gradually. Sputum, pleural

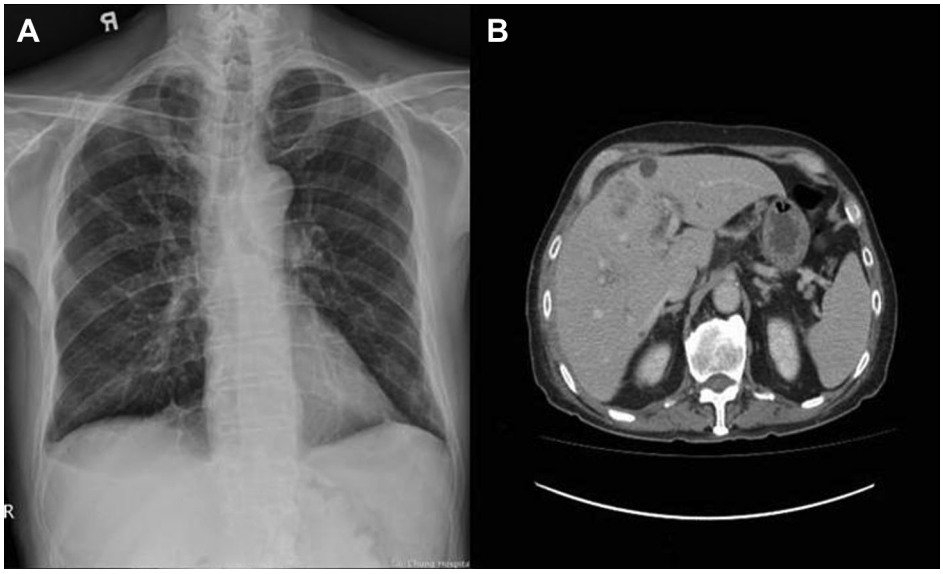

Figure 1. (A) At the first visit to the outpatient department, mild blunting of the right costophrenic angle is noted on the chest X-ray image. (B) A computed tomography scan shows a heterogeneous low-density lesion at the S4 segment and an adjacent cystic lesion.